ENERGY

REPORT

Municipal Energy Conservation

Municipal Energy Conservation and the Law

Province of British Columbia

Ministry of Energy, Mines and Petroleum Resources

BC
E45C67
D:M865
1982
c.3

MUNICIPAL ENERGY CONSERVATION

AND THE LAW

Prepared for

Ministry of Energy, Mines and
Petroleum Resources
Conservation & Renewable Energy Branch
Vancouver, B.C.

by

West Coast Environmental Law
Research Foundation
Vancouver, B.C.

August 1982

Canadian Cataloguing in Publication Data
Main entry under title:
Municipal energy conservation and the law

Includes bibliographical references.
ISBN 0-7719-9076-6

1. Energy conservation - Law and legislation - British Columbia. 2. Municipal corporations - British Columbia. I. West Coast Environmental Law Research Foundation. II. British Columbia. Conservation & Renewable Energy Branch.

KEB376.M86 346.71104'679 C82-092317-6

PREFACE

This booklet is intended to introduce the reader to the legal powers available to municipalities to initiate energy conservation. It is not intended to be comprehensive or definitive, or to replace the professional advice of a lawyer. Every effort has been made to make the booklet an accurate summary of the law as it stands May, 1982.

* Opinions expressed in this report are those of the consultant and do not necessarily represent those of the Ministry of Energy, Mines and Petroleum Resources.

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
2.0	LAND-USE PLANNING	3
	2.1 URBAN CHARACTERISTICS AND ENERGY CONSIDERATIONS	3
	- Mix and Integration of Land use	3
	- Density	3
	- Local Pattern	4
	- Site Selection and Landscaping	4
	- Building form	4
	2.2 LEGAL POWERS OF LOCAL GOVERNMENTS	6
	- Official Plans	6
	- Land-use By-laws	8
3.0	TRANSPORTATION	15
	3.1 TRAFFIC CONTROL	15
	3.2 COMMERCIAL TRANSPORTATION: INTERMODAL TERMINALS	17
	- Local Government Powers	18
	3.3 TRANSPORTATION MODES	20
	- Automobiles	20
	- Walking	22
	- Bicycles	23
	- Public Transport	24
4.0	BUILDING REGULATIONS	25
5.0	RECYCLING	28
	- Establishing a Recycling Program	29
	- Source Separation	30
	- Mechanical Separation	32

		Page
6.0	LEGAL ISSUES	34
6.1	LEGAL EFFECT OF MUNICIPAL BY-LAWS	34
6.2	THE DRAFTING OF BY-LAWS	34
	- Council Powers	35
	- Proper Enactment	35
	- Uniform Application	36
APPENDIX		38
FOOTNOTES		40

1.0 INTRODUCTION

Local governments can exert a major influence in the conservation field: they are already responsible for planning and delivering services such as water supply and waste collection; they enforce provincial standards for services provided by the private sector; and they are the only authorities organized to deal on a day-to-day basis with the many energy decisions concerning design, construction and operation of a variety of structures in the municipality. Thus, they are presently involved in processes that determine future energy-use patterns. While, to date, energy management has not been a priority on the municipal agenda, there are a number of reasons why municipalities should seriously consider energy-conservation programs.

The first has to do with money. Caught between restricted revenues and rising expenses, local governments have to look for ways to cut costs. Of those available, energy conservation is one of the least controversial and most socially desirable.

The second has to do with the political image of municipal governments. Most municipalities want to guarantee their residents the highest possible standards in services, planning and quality of life. As energy prices rise and shortages loom, energy-conserving communities may be seen to provide greater security to their ratepayers.

The third has to do with the importance of community economic health. The future economic viability of a municipality may be considerably enhanced if businesses and households can be protected to some extent against rising energy costs.

However, before municipalities can become involved successfully in energy conservation, a systematic and well-developed program must be developed. This requires that the laws that impede or facilitate energy-conservation initiatives be clarified. This booklet attempts to do so. It examines the relevant law in four areas in which municipal energy-conservation programs are feasible:

- land-use planning
- transportation
- building construction
- recycling

It also deals with legal issues that affect the formulation of by-laws or programs relevant to energy conservation. It will be of use to councillors, planning staff and solicitors in municipal governments, as well as to developers, citizen groups and energy-conscious individuals.

While knowledge of the relevant law is essential for any successful energy-conservation program, creating the right political climate is also of utmost importance. Taking appropriate "in-house" energy-conserving measures can contribute to this climate. For information on how municipalities can get their own houses in order see Fuel for Thought: A Primer on Energy Management for Municipalities, published by the Ministry of Energy, Mines and Petroleum Resources and available at no cost from:

Conservation & Renewable Energy Branch
#2006 - 1177 W. Hastings Street
Vancouver, B.C. V6E 2L7

2.0 LAND-USE PLANNING

2.1 URBAN CHARACTERISTICS AND ENERGY CONSIDERATIONS

In the first part of this section, we describe certain characteristics of urban land use related to energy conservation. In the second part, we look at the legal powers available to local governments to promote land-use energy conservation.

Mix and Integration of Land Uses

Since World War II, suburbs have been built in which homes, workplaces, and shopping and recreational areas are separated by long distances. To be more energy efficient, residential, commercial, industrial and recreational areas need to be integrated with one another. This would result in energy conservation in the following ways:

1. By reducing the distances among these areas, energy used in transportation could be reduced since cars could be used less frequently and more could be done per trip. In addition, public transit could be used more easily providing it was well integrated.
2. Waste heat from industrial processes could be used to heat buildings.

Density

Higher residential densities can reduce energy requirements in two ways:

1. They can reduce the required number and length of water mains and sewer lines, and the need for other municipal services.
2. They can increase the use of public transportation.

Local Pattern

Subdivision design.

By designing subdivisions with east-west street alignment, buildings can be oriented to take advantage of solar heat.

Cluster housing.

Cluster housing can promote --

. better use of a site's natural features,

. more onsite recreational facilities because of greater common space,

. lower servicing costs,

. more efficient use of heat through wall sharing, smaller units, and common heating systems.

Site Selection and Landscaping

By taking into account topography, vegetation and exposure to sun and wind, site selection and landscaping can reduce energy costs.

Building Form

Multi-family strucutures -- either low-rise or small high-rise -- are the most energy efficient form of dwelling, followed by townhouses, detached single family houses and mobile homes (see Table 1).

Table 1. Energy Efficiency of Alternative Housing Types (New Units)

Type of Unit	Million BTUs Used Per Year for Space Heat	Energy Savings
One-story single family home	64	Base
Two-story single family home	59	15%
Two-story duplex	45	30%
Two-story triplex	42	35%
Low-rise condominium or apartment with the same living space as all of the above units	38	40%
Typical low-rise apartment with less space than the above units	21	67%

* All units are three-bedroom homes except the last unit, which is a typical, small two-bedroom apartment.

Source: Energy Conservation Through Land Use Planning: A Synthesis of discussions at a Symposium Held in Montreal, 26-28 March, 1980, A. Sewell and H. Foster, Land Directorate, Environment Canada, Ottawa, 1980.

2.2 LEGAL POWERS OF LOCAL GOVERNMENTS

Local governments have the power to promote energy conservation within their boundaries, particularly in new developments. The legal tools include--

- official plans
- zoning by-laws
- development permits
- subdivision by-laws
- provision of municipal services

Official Plans

The Municipal Act outlines the contents of official plans for municipalities and regional districts. It states (s.810(2)) that an official plan shall contain--

- A statement of broad social, economic and environmental objectives to be achieved by implementing the plan; and
- A statement concerning the general form and character of an area's future land-use pattern.

A local government could, then, make a statement such as the following, to indicate its commitment to energy conservation in its land-use policies:

> The (District, City) shall develop land-use policies that reduce the need to travel, increase access to public transit and permit building configurations that increase the efficiency of residential heating.

Such a policy statement could have two important results:

1. By demonstrating a municipality's commitment to the efficient use of energy, it could influence initiatives from municipal staff, local developers and residents.
2. It could encourage inclusion of energy considerations in zoning by-laws, property standards by-laws, subdivision approvals, development permit applications and the future provision of municipal services.

The Vancouver Charter does not enable Vancouver's official plan to contain such a broad policy statement, but in 1977 Vancouver City Council adopted a resolution committing itself to the practice of energy conservation.

Energy supply-and-demand studies will generally be required as background material for formulating energy policies and programs within the official plan. The Municipal Act (s.810(3)(a)) authorizes such studies.

It may also be useful to fund private research on energy needs, consumption, conservation and attitudes in the community prior to drawing up an official plan. This is particularly appropriate for local governments that do not already have staff with the necessary expertise. Such action is also authorized by the Act (s.269).

Before before drawing up an official plan, a municipality could usefully classify areas into "energy zones" according to their energy efficiency. This could be determined by such factors as their proximity to transit, shopping areas and work places. Whether an area. falls into a high- efficiency energy zone or a low-efficiency energy

energy zone could then be used to determine what priority it should be given regarding major municipal capital expenditures on services or public facilities. These zones could also be taken into account when making amendments to land- use by-laws (Municipal Act s.810).

Land-use By-Laws

Energy conservation policies articulated in an official plan are put into effect through land-use by-laws. These include—

. zoning by-laws

. development permits

. subdivision by-laws

Zoning By-laws.

Zoning is the principal land-use regulatory tool available to municipalities. It allows local governments to regulate the use to which land may be put, the densities of those uses, and the size, shape and siting of buildings on the land within the zones.

For municipalities and regional districts, s.716(2) of the Municipal Act outlines the factors to be taken into account by a local government in making zoning regulations. The following sections are most relevant to energy conservation:

. s.716(2)(a), which deals with the promotion of the health, safety, convenience and welfare of the public.

. s.716(2)(c), which deals with the securing of adequate light, air and access.

. s.716(2)(d), which deals with the value of the land and the nature of its present and prospective use and occupancy.

For Vancouver, s.565 of the Charter lays out the powers of the City to regulate land use and development through zoning power. These regulations can be used to conserve energy in a number of ways.

How Local Governments Can Use Zoning By-Laws To Conserve Energy

Under the zoning powers granted by s.716 of the Municipal Act and s.565 of the Vancouver Charter, local governments can pass zoning by-laws which would--

- Promote higher-density residential developments close to proposed or existing transportation networks or service centres.
- Encourage interrelated land uses in close proximity to one another, and discourage strip development.
- Create "Comprehensive Development Zones" in appropriate areas. Such zones have three features relevant to energy conservation:
  1. They can allow mixed-use developments.
  2. They can allow greater flexibility relative to traditional zoning by-laws regarding siting and lot-line restrictions.
  3. They can permit innovative energy-efficient housing projects such as cluster housing, which can share walls and take advantage of the topographic features of the site. (Because the regulations under the Condominium Act allow greater flexibility in siting, they may offer more possibilities for cluster housing than those under the Municipal Act.)

. Preserve land for local food production. (As the costs of transporting food increase, the preservation of good arable land becomes more important to the welfare of B.C.'s communities.)

. Allow greater use of the home for small business activities, particularly small-scale handcraft and service occupations. (Presently, many zoning by-laws allow homecraft production, but restrict sales and service from the same location. Energy savings would result from diversifying the use of a building and from transportation savings for both proprietor and customer.)

. Promote energy-conserving appendages to buildings such as greenhouses and solar collectors by not including them in the calculation of floor-space ratios.

. Require the wall of a building with the largest window area to face south.

. Require height limits on residential buildings according to siting on the lot, so as to protect the solar access of adjoining buildings (see Figure 1).

. Allow "infilling", that is, development of substandard lots, particularly near downtown cores and regional centres. (The main advantages are reduced travel and increased housing capacity without the corresponding need to increase municipal services.)

Development Permits.

The development permit system is an integral part of the zoning system. It allows certain provisions of existing zoning and subdivision by-laws to be waived or supplemented in certain cases. A development permit may <u>not</u> (except in Vancouver) vary the

permitted uses or densities of land use which are prescribed by the existing zone regulations, but it can vary other relevant factors, in particular, the siting and dimensions of buildings.

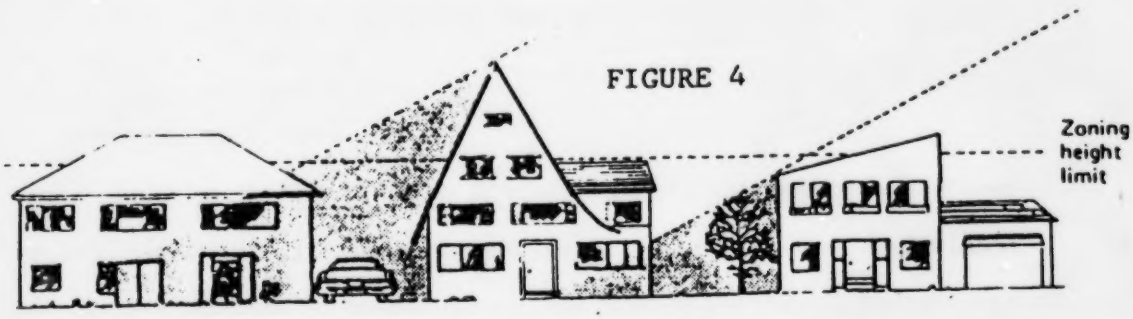
S.717 of the Municipal Act states that, when enacting a development permit (as an amendment to its zoning by-laws), a local government must take into account the efficiency and quality of the development, the impact of development on present and future public costs, on the environment, on community goals and on public space. Since all these factors are important to energy-efficient land use, the legislature --without actually spelling out energy conservation as a factor to be considered--seems to have given municipalities a mandate to design their development-permit regulations with energy conservation in mind.

How Local Governments Can Use Development Permits To Save Energy

Under the appropriate circumstances, local governments could include the following in a development permit:

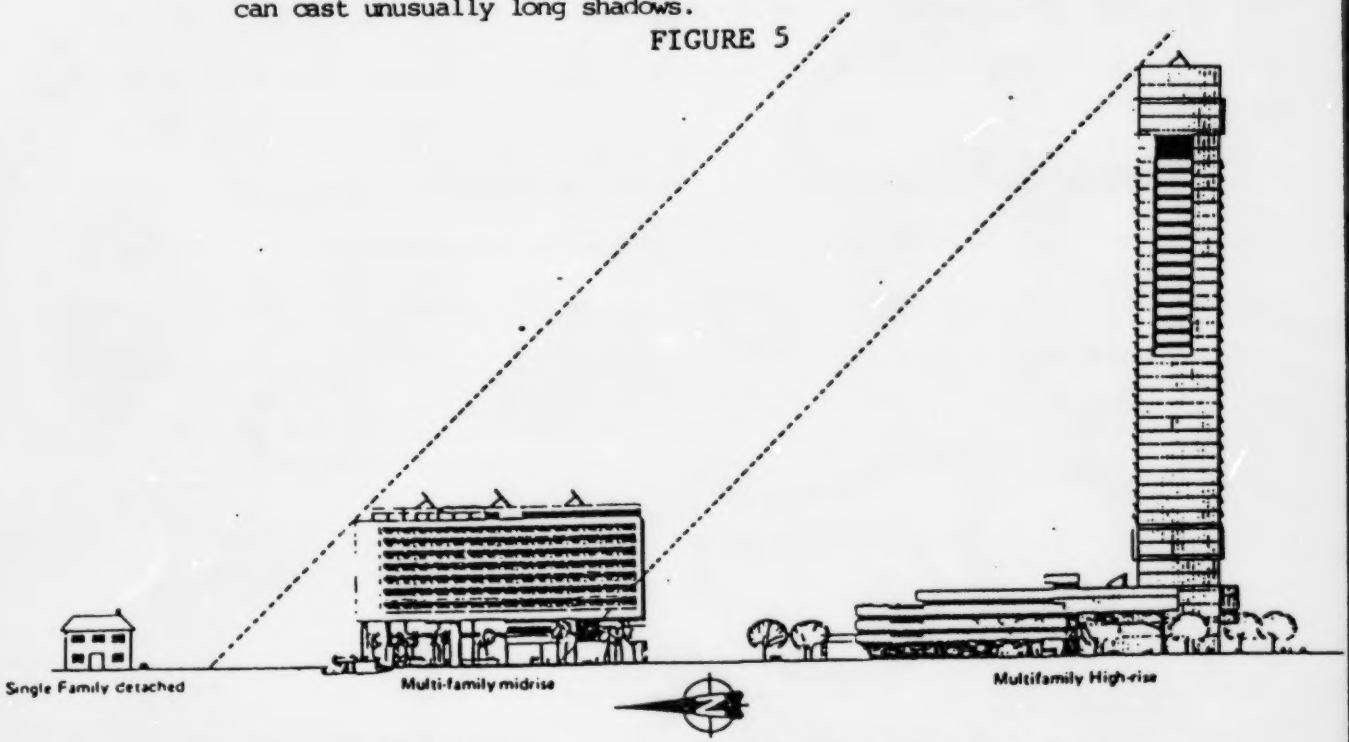
- Siting and dimension specifications for buildings to preserve solar access for adjacent buildings and to take advantage of the energy-conserving features of the local topography (Municipal Act, s.717(2)(a)).
- Standards that require the use of high-efficiency exterior lighting systems (s.717(2)(e)).

FIGURE 4



For zoning, building heights are usually measured at the average of the roof peak and eave. This means that steeply angled roofs can cast unusually long shadows.

FIGURE 5



Shading can be minimized if building heights change gradually between different sections of the city.

Figure 1. Roof Lines and Solar Access

Source: Energy Efficiency in Municipalities: The Law, Government of Ontario, Ministry of Energy, 1980, p. 17.

. Provisions which encourage less window surface on north and west walls and more on south and east walls (s.717(2)(k)).

Subdivision By-Laws.

S.85(3) of the Land Titles Act states that the approving officer for subdivision applications may refuse his approval of a subdivision plan if he considers it to be against the public interest. And s.87(1) allows him to refuse approval if the proposed plan does not conform to the land-use by-laws or the official plan of the local government. So the approving officer has the power to refuse a subdivision plan if it is not energy efficient.

In addition, municipalities and the City of Vancouver are given authority to make regulations governing the subdivision of land by s.729-733 of the Municipal Act and s.292-293 of the Vancouver Charter, respectively. This power can be used in a number of ways to conserve energy.

How Local Government Can Use Subdivision By-Laws to Save Energy

Local governments can--

. Require that lots in new subdivisions be aligned so as to encourage building sitings that maximize the potential for solar energy input (Municipal Act, s.729(1)(a).

. Require, where possible, that the property be subdivided so that individual lots make the best use of natural features to provide shelter and appropriate shading for building sites (s.729(1)(c)).

. Require the provision of open space in the most suitable locations within the subdivision so that frequent use of local recreational opportunities will be encouraged (s.729(10) and (11)).

Provision of Municipal Services.

Municipalities have the power over routing, dimensions and timing of the installation of sewer, utility and drainage lines as well as streets and other transportation routes. A local government can effectively direct the nature of development within its boundaries by installing new services or expanding old ones in accordance with energy-conserving policies expressed in the plan.

3.0 TRANSPORTATION

Decreasing reserves of Canadian conventional oil, uncertainties about Canada's future production capabilities and unstable international supply are all compelling reasons for initiating conservation programs in fuel consumption.

This section explores the powers of local governments to encourage energy-efficient use of transportation fuel through traffic control and intermodal terminals. It also outlines the legal powers available to create incentives for switching to more energy-efficient means of transportation and disincentives for using less efficient ones.

3.1 TRAFFIC CONTROL

The Motor Vehicle Act (M.V.A.) is the primary statute regulating motor vehicle traffic. It gives local government the power to make by-laws to regulate local traffic and to enforce traffic regulations (M.V.A. s.120(1)(s) and s.s.121(1)(a) to S.130).

If local by-laws are approved by the Minister of Transportation and Highways, they apply to arterial highway traffic (M.V.A. s.s. 120(3), (4), (8) and (11)). Local governments have the same powers and rights with respect to highways as the Cabinet and the Minister of Transportation and Highways (M.V.A. s.120(3) and (4)).

In making by-laws, council may classify vehicles, highways or portions of highways and may make different regulations for different classes and different highway conditions (M.V.A. s.120(7)). A court

may not strike down a by-law simply because it is discriminatory in its application (M.V.A. s.120(6)).

How Local Governments Can Use Traffic-Control By-Laws To Conserve Energy

- Local government can erect traffic control devices to regulate or prohibit the stopping, standing and parking of vehicles (M.V.A. s.120(1)(c)) and can impound unlawfully parked vehicles (M.V.A. s.120(1)(f)). They may also regulate the establishment and use of loading, commercial and passenger zones, and taxi stands (M.V.A. s.120(1)(g) and (p)). Such regulations reduce traffic congestion and thus reduce fuel consumption.
- Local governments can regulate traffic speed for greatest fuel economy and safety (M.V.A. s.151(6)-(10)).
- Local authorities can discourage unnecessary vehicle idling by enforcing the prohibition against leaving unattended vehicles unlocked (M.V.A. s.192).
- Local governments can require trucks, which tend to slow down other traffic and use large quantities of fuel in normal stop-and-go driving, to travel on the least congested, most energy-efficient routes available (s.528(e) and s.528(b) of the Municipal Act (M.A.) and s.317(g)-(j) and (l)-(o) of the Vancouver Charter (V.C.)). (In the event of a dispute concerning the local government, the Motor Carrier Commission is the final arbitrator, imposing whatever conditions it deems proper (Motor Carrier Act s.38).)

. Local governments can encourage the use of buses and car pools by establishing separate lanes for their use (M.V.A. s.s.120(3) and 211(g) and (h)).

. Local governments can regulate the direction of traffic in particular lanes to accommodate the predominate flows of the day (M.V.A. s.s.120(3) and 211(g) and (h)).

3.2 COMMERCIAL TRANSPORTATION: INTERMODAL TERMINALS

Commercial transportation accounts for about 55% of petroleum fuel consumption in British Columbia; and trucking, the primary mode of interurban freight transportation, uses about 60% of that amount. Thus, reducing the amount of interurban trucking would result in considerable energy savings.

One way to reduce trucking between urban areas is through the development of intermodal terminals, where passengers or freight are transferred from one transportation mode to another. In the local context, truck-rail terminals hold the greatest promise for energy conservation. Transportation between urban centres could be done by rail; then the goods could be transferred to trucks at intermodal terminals for the last leg of the journey.

Intermodal Terminals in Columbus, Ohio
and Brampton, Ontario

A study done in Columbus, Ohio, of a truck-rail terminal situated on the fringe of the central business district concluded that it would reduce intercity truck traffic by 90%.

The Brampton intermodal terminal being constructed just north of Toronto is projected to save 200 million gallons annually as a result of the shift from truck to rail.

Local Government Powers

Under the Municipal Act, local governments may do the following:

- Expend money to inquire into railway or harbour improvements by a two-thirds vote of the council (M.A. s.270).
- Establish a system to transport freight by rail or ferry within the municipality and adjcacent localities, upon ministerial approval and elector consent (M.A. s.633(1)(a)). If the system is intended to service an intermunicipal area, the approval of adjacent municipalities is needed (M.A. s.634). The Municipal Act also allows for the joint exercise of authority (s.237).

. Acquire property for the purpose of establishing a rail or ferry system for transporting freight (M.A. s.529). Intermodal ferry terminals are not subject to the Ferry Act, R.S. Chapter 127, if they are operated by a local government (Ferry Act s.1.).

. Develop the property as a commercial or industrial area and provide any works and services deemed beneficial for the development (M.A. s.530(1).

The Vancouver Charter is broader through not as explicit as the Municipal Act. It permits the City to do the following:

. Acquire real property needed for the purposes of the City (s.190(a)).

. Acquire real property for the purpose of providing sites for commercial and industrial development, and construct buildings and provide whatever services are deemed necessary (s.193A).

. Engage in any commercial, industrial or business undertaking (s.137(1)).

. Make expenditures for the maintenance, repair and improvement of any city property (s.185(1)).

The Railway Act (R.A.) provides an alternative method for establishing an intermodal rail terminal.

. With electoral assent, local governments may purchase shares, lend money (R.A. s.128) and exercise shareholder voting rights in a railway company (R.A. s.95).

. Local governments holding stock of $20,000 or more are entitled to a directorship in addition to whatever directorships they obtain through normal shareholder election (R.A. s.107).

By using these powers, local governments could establish, control or enter business relationships with a railway company.

The City of Vancouver is not included within the Railway Act's definition of municipality (R.A. s.1). However, the Vancouver Charter (s.137(1)) allows for the purchase of railway shares.

3.3 TRANSPORTATION MODES

This section addresses ways local governments can discourage reliance on cars and encourage walking and bicycling. It also explores the power of local governments to establish public transit systems.

Automobiles

Cars and other light vehicles consume about 75% of petroleum-based transportation fuels. They are the least energy-efficient form of transportation and consume twice the fuel of public transit vehicles per passenger mile. Thus, reducing their use will contribute substantially to energy conservation.

How Local Governments Can Discourage The Use of The Automobile

- They can restrict the volume of traffic in selected areas and so discourage unnecessary motor vehicle use by—
  - establishing one-way streets (M.V.A. s.129(1)(a); V.C. s.318 (c))
  - prohibiting vehicle standing and parking (M.V.A. s.129(1)(c); V.C. s.317(a) and (w))
  - restricting access to properties adjoining highways (M.A. s.579(d); V.C. s.291(g) and (i))
  - closing or stopping up highways to create deadends (M.A. s.578(1)(b); V.C. s.291(b))
  - altering the routes of existing highways (M.A. s.578(1)(a); V.C. s.291(c))
- They can establish high-cost, short-duration parking meters (M.V.A. s.120(i) and (e); V.C. s.317(aa))
- They can operate parking lots located at public transit terminals at the outskirts of town (M.A. s.928; V.C. s.317 (x), (y), (z) and (ee). As owner/operator, they could promote the use of smaller cars and higher vehicle occupancy by using a discriminatory scale of parking fees.
- They may also regulate the number of private parking spaces available for a building (M.A. s.712(2)(b); V.C. s.306(r)).

. They may regulate the location of service stations through their power to zone; and they can regulate their business hours (M.A. s.925; V.C. s.s.272(d) and 279A).

Walking

The design of many urban areas discourages pedestrian traffic. Disincentives include long walking distances between amenities, traffic noise and fumes, and the lack of sidewalks and shade trees.

How Local Governments Can Encourage Walking

. Since sidewalks and walkways fall within the statutory definition of highway, local governments may design and construct sidewalks, expropriate land or require a subdivider to dedicate land to and build sidewalks (M.A. s.s.578(2)(b) and s.729(1)(d)).

. Local governments could ban vehicles from certain areas for the benefit of pedestrians (M.V.A. s.120(1)(b); V.C. s.317(g), (v), and (bb)) and could plant trees and shrubs to protect them against wind and sun (M.A. s.579(1)(b) and (c); V.C. s.291(k) and (l)).

. Property owners could be required to remove snow and ice from sidewalks adjoining their property (M.A. s.579(2)(a); V.C. s.291(i).

Bicycles

Bicycles are not only highly energy efficient, they are quiet, nonpolluting, inexpensive and relatively easy to maintain. Currently, though, few provisions have been made for bicycles on roadway systems and, thus, their use is discouraged. Local governments can take some measures to reverse this situation.

How Local Governments Can Encourage Bicycle Use

- When considering traffic by-laws, local governments could take into account the limitations and special needs of cyclists.
- Since bicycle paths are statutory highways, local governments could expropriate land to build bicycle paths and they could require subdividers to dedicate land to and build such paths. (The problem with bicycle paths is that, where they cross major intersections, they can be quite dangerous. This might require the construction of overpasses, which are quite expensive. However, this is done in Europe where cycling is considerably more popular.)
- As an alternative to separate paths, local governments could set up bicycle lanes on existing highways.
- To promote the greater use of bicycles and to educate both the cyclist and motorist regarding the rights and duties of the cyclist, local governments could provide funding to local bicycle organizations (M.A. s.269(h); V.C. s.209(h).

Public Transit

Public transit vehicles require half the energy of automobiles per passenger mile, so increasing their use will decrease energy use.

While the Municipal Act gives local governments powers to establish and regulate public transit facilities (M.A. s.s.625, 626, 646 and 647) (the Vancouver Charter has no comparable provision), if they wish to have their transit system provincially subsidized, provisions of the Urban Transit Authority Act R.S. Chapter 421 apply. Since most municipalities receive provincial subsidies, they play a secondary role in the provision of transit services.

But local governments can influence the character of the transit system when negotiating agreements. They can also be represented indirectly on the regional district or the transit authority. This political influence, while far short of direct management, should not be underestimated.

4.0 BUILDING REGULATIONS

Energy use by the residential and commercial sectors of the economy accounts for 28% of total energy consumption in British Columbia. Most of this is used to heat, cool, ventilate, light and provide auxiliary services in homes and buildings.

By insulating walls and ceilings, caulking, and installing weather stripping and vapour barriers, energy waste can be reduced. Conversion from one energy source to another (e.g., from oil to gas), use of passive and active solar heat and hot-water systems, and heat storage and recovery systems can also reduce energy consumption, as can turning down the thermostat, installing automatic thermostat controls and water suppressors, turning off lights and/or reducing their wattage. Amount of glazing, thermal mass and overhangs can also significantly affect thermal performance of buildings.

Through enforcing the building code, issuing permits and licences and inspecting works, local governments, in part, control the quality of the built enviroment. Despite this power to <u>enforce</u> regulations, municipal governments in British Columia have virtually <u>no</u> power to <u>create</u> regulations governing building construction and design. Such regulations are contained in the Building Code, which is the responsibility of the Minister of Municipal Affairs. This severely restricts what a local council can do to introduce energy-conserving measures. However, they can still play an important role.

How Local Governments Can Encourage Energy Conservation in Buildings

- Public Information Programs.

  B.C. municipalities need no specific legislative authority to conduct education programs on how to conserve energy in building construction. Programs could include workshops for residents, contractors and developers, on improving the thermal efficiency of existing homes and buldings, and on energy-efficient design and construction of new buildings. Many B.C. communities have already adopted this approach.

- Demonstration Projects.

  A municipality could also undertake a demonstration project on energy conservation. The power to do so flows from a municipality's general rights as a corporation with full powers to acquire, hold and dispose of real and other property and to contract for materials and services (M.A. s.19 (1)).

Demonstration Projects

In August 1981, Vancouver opened its Energy Conservation Demonstration House. It featured different kinds of insulation, double glazing, passive solar and thermosyphen principles, and heat exchanges. The house is open to the public on a daily basis and serves as a centre for community-based education programs.

Four other demonstration projects have been undertaken in various municipalities throughout British Columbia. All the projects have been jointly funded by the B.C. Ministry of Energy, Mines and Petroleum Resources, Energy, Mines and Resources Canada and the local municipality.

- A municipality could issue voluntary guidelines to supplement the building code. This would provide the opportunity for all those involved to experiment with alternative methods of incorporating energy conservation into development plans and to work out difficulties.
- Municipalities do not have the power to require existing buildings to be weatherized and brought up to energy-efficient standards. But they could issue retrofit guidelines and provide information to property owners on effective and safe methods of retrofitting their buildings.
- The municipality's power to require an occupancy permit (M.A. s.734(k); V.C. s.306(g)) after any alteration or change in occupancy could give it the opportunity to inspect buildings and, when doing so, to encourage upgrading of older buildings to meet currently accepted conservation guidelines.

5.0 RECYCLING

Recycling programs are the most easily adoptable, and politically acceptable of the energy conservation measures currently available to local governments. And, as can be seen in Table 2, the energy savings can be substantial.

Table 2

Potential Energy-Pollution Control
And Resource Savings From Recycling

100% Recycled Materials Used	Energy Saved	Air Pollution Reduced	Water Pollution Reduced	Source Waste Reduced	Water Saved	Materials Saved
Paper	23-70%	60-73%	15-61%	39%	61%	90-100%
Glass	8%	20%	50%	80%	50%	54%
Steel	47-75%	86%	75%	97%	40%	90%
Aluminum	97%	96%	97%	100%	95%	98%

Source: Recycling Switchboard/E.P.A./Minnesota Pollution Control Agency. "Realities of Recycling."
From Recovery Associates Engineering Ltd., January, 1981, for Waste Management Branch, Ministry of Environment.

By instituting a recycling program and removing solid wastes from the normal waste stream, municipalities can lengthen the lifetime of a disposal site, reduce the size of the haulage fleet and reduce the number of trips the trucks must make. Additional benefits include resource conservation, employment opportunities and community participation in environmental control, which may stimulate other energy conservation initiatives.

The existing waste-handling infrastructure is the most important constraint on recycling, since it respresents a significant investment. The ability to market recycled materials is another constraint, since it depends on world demand, which tends to fluctuate. Finally, while people are, in general, interested in recycling, they will participate voluntarily only if they can do so in a convenient manner.

The Stanley Report on Municipal Waste Recycling

In 1981 the Waste Management Branch of the B.C. Ministry of Environment released a study by Stanley Associates Engineering Ltd. on municipal waste recycling. The report indicates the potential economic and energy savings achievable through recycling, and recommends that municipal and senior levels of government take steps to integrate recycling into comprehensive waste-management programs. It can be obtained at no cost from the:

Waste Mangement Branch
Ministry of Environment
Legislative Building
Victoria, B.C. V8X 1X5

Establishing a Recycling Program.

A municipality's power to establish a recycling program comes from its power to establish a system of garbage collection and disposal (M.A. s.614(b)(c)). While these provisions emphasize the traditional pick-up and landfill operations, their terms are broad enough to empower a muncipality to engage in any kind of waste management it chooses.

Source Separation.

In addition to implementing a comprehensive recycling program, a municipality can pass regulations requiring source separation of recyclable materials from all households (M.A. s.614(d); V.C. s.303(b)). However, mandatory regulations may not be desirable or necessary. The very high participation rates demonstrated in some municipal projects suggest that when recycling pick up is coordinated with regular municipal pick up, people will voluntarily separate their recyclables.

A municipality may enter into contracts with persons for all or part of such collection, removal or disposal (M.A. s.614(f); V.C. s.303(e).

Diversion Credits

While some municipalities choose to contract with a recycling group for a set sum per year, "diversion credits" are becoming a popular method of paying a contractor for materials collected in a recycling process. They work on the principle that, in the long run,

recycling reduces costs in direct proportion to the amount of material diverted from the normal municipal waste stream. Currently, diversion credits range from $5 to $29 per ton of materials diverted.

Vancouver City Council can make money grants to any organization considered to be contributing to the culture, beautification, health or welfare of the City (V.C. s.206(j). The activities of a local recycling society would have no trouble falling within the broad terms of this provision.

Recycling in the Greater Victoria Region

The Capital Regional District has been operating recycling depots since 1971. Residents, along with several large institutions such as B.C. Hydro, Canadian Forces Base and B.C. Telephone, deliver their recyclables to one of the depots. In addition, recyclables are collected from apartment complexes and the Parliament Buildings. About 10 percent of the population in the contributing area are participating. The program derives about half its operating costs from sales, while municipal support in the form of diversion credits and a matching provincial grant supply the other half.

Curbside Pickup of Recyclables in the District of Saanich

In September, 1980, the District of Saanich initiated a pilot curbside-pick-up recycling project involving about 2000 homes. The participation rate is high, about 75%. Saanich pays a contractor a set rate per pick up, and all revenues from sales go to the municipality. At present, revenues cover about one third of the collection costs.

Mechanical Separation.

An alternative to source separation is mechanical separation of recyclable components into reusables, recoverables, and combustibles at a central processing facility. Combustibles can then be used to generate electricity, energy for industry, or heat for homes and offices under the Municipal Act, which empowers a local government to establish, maintain and operate a public incinerator (s.614(e)).

A local government may also (with the assent of the electors and approval of the Minister of Municipal Affairs) establish its own utility system to supply and distribute electrical energy or gas to the inhabitants of the municipality (s.632.(1)). The capital expenditure required to set up and maintain a central processing operation makes it uneconomical for communities of under 100,000 people. However, if the cost of fuel and resources continues to climb, processing plants could be viable in the Vancouver and Victoria areas.

Central Processing Facility in Quebec City

Quebec City has operated a central processing facility since 1974. Refuse-derived fuel from municipal wastes produces steam, which is sold to a nearby pulp mill. Revenues from the operation enable the facility to break even.

The Recycling Council of B.C.

The Recycling Council of B.C. is a nonprofit society made up of local recycling associations. It provides advice to its members on managing recycling operations and acts as a central marketing agency. It may be advantageous for municipal councils to coordinate their recycling programs with the Council. For more information contact the Recycling Council at 1629 Columbia, North Vancouver, B.C. (telephone 988-6817).

6.0 LEGAL ISSUES

Municipal authorities will usually be familiar with the statutes and regulations which directly affect their day-to-day activities but not with the legal principles and case law governing municipal issues. The following is a brief discussion of how certain principles and particular court decisions could affect the drafting of by-laws relating to energy conservation.

6.1 LEGAL EFFECT OF MUNICIPAL BY-LAWS

Municipal by-laws do not bind the provincial government unless an enabling statute expressly states that the Crown shall be bound (s.14 (2) of the Interpretation Act; R v. Victoria (1979) 4 W.W.R. 331 (B.C.A.)).

Within its physical and legal areas of jurisdiction (e.g., harbours and airports), the federal crown is also immune from the effect of local land-use laws. However, in all other respects, local by-laws do bind the federal crown and its agents.

6.2 THE DRAFTING OF BY-LAWS

Generally, by-laws are valid when they are--

. within the power of a council to enact them

. properly enacted

. uniform in application

Each of these principles is discussed below.

Council Powers

Energy conservation is nowhere specifically mentioned in the Municipal Act or Vancouver Charter as an objective of local governments in exercising their law-making powers. But there seems to be enough scope in the Municipal Act relating to public welfare and protection of the environment to legitimize most by-laws containing an energy-conservation element. Furthermore the courts in B.C. have been liberal in their interpretation of the breadth of municipal by-law power:

> Zoning by laws should be considered as remedial and construed liberally since their purpose generally is to secure community amenity and not to restrict individual rights.[1]

Proper Enactment

Some types of by-laws require that public hearings be held or other conditions met prior to passage. In addition, by-laws must be enacted in "good faith" and be fair.

Good faith has to do with the purposes for which a by-law is enacted: if it is motivated by concern for the public interest and not for the benefit of certain individuals then the courts will consider it to have been enacted in good faith. (The courts will not question what a local government considers to be in the public interest.)[2] Any by-law clearly motivated by a concern for energy conservation would not likely be challenged on grounds of bad faith.

The question of fairness may present more difficulties. The courts are willing to examine how a council reached its decision to pass a by-law and whether it took into account questions of fairness. They will, for example, examine a rezoning by-law that affects a land-owner who purchased property for development in conformity with then-current land-use by-laws.[3]

Uniform Application

By-laws must not wrongfully discriminate between individuals, their interpretation must be certain, and they must not allow municipal officials too much discretion.

Wrongful discrimination involves two elements, both of which must be present before a by-law would be condemned on this ground:

1. The by-law must discriminate in fact; that is, it must give permission to one and refuse it to another.
2. The motive for the discrimination must be improper; that is, the by-law must have been passed in order to favour or hurt one individual and without regard to the public interest.[4]

By-laws enacted to achieve an energy-conserving purpose should not be subject to attack on the basis of wrongful discrimination since they would not involve an improper motive; that is, they would not satisfy the second condition.

But care would have to be taken to ensure that a by-law enacted to achieve an energy-conserving purpose is not open to attack on grounds of uncertainty; the exact terms would have to be specified so that their interpretation was clear.

Care must also be taken to avoid giving officials excessive discretionary powers. While a by-law may grant some discretion, it must outline, with sufficient precision, the parameters within which the discretion is to be exercised.[5]

APPENDIX

OTHER STATUTES AFFECTING LAND USE IN B.C.

The Municipal Act, Vancouver Charter and Land Title Act are the principle provincial statutes affecting municipal authority over land use in B.C. However, several other provincial and federal statutes also have an impact on various aspects of land-use control.

PROVINCIAL STATUTES

Land Commission Act (s.9-12): Land in the Agricultural Land Reserve may not be zoned other than as farm land without the approval of the Agricultural Land Commission.

Condominium Act: s.8(3) and B.C. Regulation 75/78: Land may be subdivided under the Condominium Act and the B.C. Regulation 75/78.

Environment and Land Use Act s.3: Environment and Land Use Council may study and make recommendations regarding land use. The recommendations can be implemented through the broad powers over land-use decisions given to the Minister and Cabinet by S.942 of the Municipal Act.

Land Title Act (s.80(1)) and Highway Act(s.57(2)): These deal with provincial control over land use in the vicinity of controlled access highways.

Local Services Act: B.C. Reg. 262/70: This subdivision control regulation applies in unorganized territory for which a Regional Board has not passed a regulatory by-law under S.729 of the Municipal Act.

Municipalities Enabling and Validating Act: This Act and its yearly amendments touch on particular matters affecting individual municipalities.

FEDERAL STATUTES

Aeronautics Act: The federal government has the legislative authority to regulate siting of airports and to regulate activities on land adjacent to airports.

Navigable Waters Protection Act: The federal government has the authority to regulate the construction or placement of virtually anything which might affect the navigability of navigable waters.

National Housing Act: The federal government has no regulatory authority in the field of housing, but it controls the purse. It enters into agreements with provicial and local governments to provide money for housing projects and urban renewal and redevelopment schemes. In addition, through Canada Mortgage and Housing Corporation, which guarantees mortgages only on houses which are built to its standards, the federal government indirectly influences building standards.

FOOTNOTES

1. Re: Township of Esquimalt and Wood (1964), 46 D.L.R. (2d) 765 (BCSC). See also Re: Nielson et al and District of Langley (1980), 116 D.L.R. (3d) 462 (BCSC).

   Re: Cal Investments and Capital Regional District (1980), 117 D.L.R. 491 (BCSC).

   The above cases express the "liberal" point of view which, in the view of Mr. Justice Berger in Re: Cal Investments (Supra), we have always taken in B.C. There are other precedents which express the restrictive view that common law rights cannot be held to have been taken away or affected by a statute (or a by-law passed under its authority) unless it is so expressed in clear language or is necessary if the statute is to be of any effect.

   See Re: Caldwell and Toronto (1935) 2 D.L.R. 625 (Ontario C.A.), Groat v. City of Edmonton (1928) S.C.R. 522. For a side-by-side expression of both points of view see the reasons for judgement of Martland, J v. (Liberal Majority) and Spence, J v. (Restrictive dissent) in Vancouver v. Simpson (1976) 3 W.W.R. 97 (S.C.C.).

2. Wall & Redekop v. City of Vacouver (1973), 16 N.R. 440 (BCSC); affd. 16 N.R. 436 (BCCA); affd. 16 N.R. 435 (SCC).

3. Columbia Estates Co.v. Burnaby (1974) 5 W.W.R. 735 (BCSC).

   Wellbridge Holdings v. Metro Winnipeg (1971) S.C.R. 957; (1972) 3 W.W.R. 433 (S.C.C.).

   For a good discussion on the application of the developing principle of "fairness" to land-use regulation see Campeau Corporation v. Calgary (1979), 7 Alta. L.R. (2d) 294 at 302-314 (alta. S.C. - App. Div.), and Soloniuk v. Meewasin Valley Authority (1980) 6 W.W.R 376 (Sask. C.A.).

4. Lacewood Development Corporation v. Halifax (1973), 58 D.L.R. (3d) 383 at 395-6 (NSCA).

   Lees v. West Vancouver (1980) 1 W.W.R. 124 (BCCA).

   See also Standard Oil of B.C. v. Kamloops (1972) 5 W.W.R. 660; 29 D.L.R. (3d) 577 (BCSC), Trustees of the Assembly Hall of Jehovah's Witnesses v. District of Surrey, (1973) 4 W.W.R. 608 (BCSC), Scarborough v. Bondi (1959), 2 S.C.R. 444 (S.C.C.).

5. Barthropp (supra) and: Canadian Institute of Public Real Estate Companies et al v. City of Toronto (1979) 7 M.P.L.R. 39 S.C.C.